

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GLENN RESEARCH CENTER (GRC)
CLEVELAND, OHIO**

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION

PR 4200394757

I. Description of Requirement

I recommend that GRC negotiate only with Plexar Associates, Inc. to provide hardware design support through modeling efforts in support of the development of a non-intrusive ice cloud characterization tool for use in engine icing research and to provide the data acquisition and analysis software to be integrated with NASA hardware. The system shall provide nearly real-time water content uniformity in a plane of a 36-inch duct coupled to an engine inlet. The targeted ground-test facility for integration of this diagnostic tool is the Propulsion Systems Laboratory (PSL) at NASA GRC. The required system shall use Computed Tomography (CT) software in which the illumination sources are in the visible wavelength regime and detectors around the axis of rotation will measure the absorption characteristics as the light passes through a cloud of ice particles. Tomographic reconstruction shall be used to produce a two-dimensional image of the cloud uniformity within a single plane of the cloud as it travels down a round duct. The total cost of the Base and one option period is estimated to be approximately \$300,000 over a two-year effort.

II. Statutory Basis for Other Than Full and Open Competition

The statutory authority permitting other than full and open competition is 10 U.S.C. 2304(c)(1), only one responsible source and no other supplies or services will satisfy Agency requirements.

III. Rationale In Support of Statutory Authority

Plexar Associates, Inc. is a consulting engineering company specializing in algorithm development in the imaging sciences field. Their primary areas of specialty include medical imaging, industrial imaging and automated inspection and custom vision systems. The requirements of the ice water content tomography system development requires the combination of all these areas with the most unique capability being the development and implementation of custom tools and proprietary tomographic algorithms to implement the complex mathematic solutions. Plexar Associates has proven capabilities in developing custom solutions for many of the major manufacturers in the medical computer aided tomography (CAT) and medical imaging areas and brings these proprietary and patented tools to solve NASA's automated tomography measurement needs.

IV. Description and Results of Market Research

In accordance with FAR 5.2, a description of this requirement was posted to the NASA Acquisition Internet Service/FedBizOpps on 14 July 2011 and closed on July 25, 2011. The results are as follows:

Redacted

After evaluation of the submittals in the market research project requirement posting, it has been deemed that of the market research respondents only Plexar Associates, Inc. has the demonstrated expertise in the area of computed tomography and custom imaging algorithm development needed to implement a near real-time

Ice Water Content Tomography System at the NASA Glenn Propulsion System Laboratory. While the others have shown their qualifications for producing very high quality work, their expertise does not align with the needs of this task.

V. Determination of Fair and Reasonable Cost

The vendor will be required to submit adequate cost support data, and an analysis will be performed to determine the costs as fair and reasonable.

VI. Actions to Remove or Overcome Barriers to Competition


No actions to barriers are being taken at this current time. This is a highly specialized field requiring advanced mathematical and programming background and developing proficiency would require significant time and resources without providing undo risk to the Government. One viable offeror has the expertise, background and experience to perform the scope of work provided. After the duration of this proposed contract, future market research will again be conducted to determine the viability of other possible contractors that do work in this very specific marketplace when future needs arise.

Certifications



Timothy Bencie
Contracting Officer's Technical Representative

8-4-2011
Date



Jeffrey Hoyt
Contracting Officer

7-26-11
Date

Review



Karin Huth
CHB Procurement Branch Chief and Source Selection Official

7-26-11
Date

Approval



Bradley Baker
Procurement Officer

7/28/2011
Date